

## **ABSTRACT**

Apparatus and methods to optimize ultra-wideband communication through wire and cable media are provided. One apparatus comprises an ultra-wideband transmitter structured to transmit a training set of ultra-wideband pulses through the wire medium. An ultra-wideband  
5 receiver is structured to receive the training set of ultra-wideband pulses from the wire medium. A determination of which of the pulses within the training set is best suited for communication through the media is then performed. This Abstract is provided for the sole purpose of complying with the Abstract requirement rules that allow a reader to quickly ascertain the subject matter of the disclosure contained herein. This Abstract is submitted with the explicit  
10 understanding that it will not be used to interpret or to limit the scope or the meaning of the claims.